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This guideline explains the manner in which State and local agencies may meet the requirements of §127 of the Clean Air Act and the regulation (40 CFR 51.285) on Public Notification promulgated by EPA on May 10, 1979.

The guideline covers the following topics: the manner, frequency, and areas in which exceedances of the primary standards should be reported to the public; use of air monitoring data in determining exceedances; advising the public of health hazards associated with exceedances; and public awareness and involvement in regulatory efforts to improve air quality.

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Public Notification Guideline

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U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air, Noise, and Radiation
Office of Air Quality Planning and Standards
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Comments from the Executive Committees of the State and Territorial Air Pollution Program Administrators and the Association of Local Air Pollution Control Officials were sought and incorporated.

In addition, comments by EPA headquarters personnel and EPA Regional Office personnel concerned with air monitoring, State implementation plan development, and public awareness were also considered.

The authors, Joseph Sableski, William Houck, and Inez Artico, gratefully acknowledge the contributions of all those who participated in the workgroup and who commented on drafts of this guideline.

PUBLIC NOTIFICATION GUIDELINE

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PUBLIC NOTIFICATION GUIDELINE

I. INTRODUCTION

The Clean Air Act Amendments of 1977 (CAA) established a new section, §127, on Public Notification. This section requires each State to incorporate in its State Implementation Plan (SIP) provisions for notifying the public during any calendar year of instances or areas in which any national primary ambient air quality standard is exceeded or was exceeded during any portion of the preceding calendar year. Notification is to also advise the public of the health hazards associated with such pollution; enhance public awareness of measures which can be taken to prevent such standards from being exceeded; and to advise the public of ways in which they can participate in regulatory and other efforts to improve air quality.

Pursuant to the Act, the Environmental Protection Agency (EPA) has amended Part 51 of Title 40, Code of Federal Regulations, to include Subpart O which reads as follows:

Subpart O--Miscellaneous Plan Content Requirements

§51.285 Public notification.

By March 1, 1980, the State shall submit a plan revision that contains provisions for:

(a) Notifying the public on a regular basis of instances or areas in which any primary standard was exceeded during any portion of the preceding calendar year,

(b) Advising the public of the health hazards associated with such an exceedance of a primary standard, and

(c) Increasing public awareness of:

(1) measures which can be taken to prevent a primary standard from being exceeded, and

(2) ways in which the public can participate in regulatory and other efforts to improve air quality.

This guideline explains the manner in which States and local agencies may meet the requirements of the CAA and the regulation. Other approaches than the one described herein may be acceptable. In developing this guideline, however, EPA has endeavored to set forth the minimum necessary to meet the requirements of the Act. Other approaches should at least be of equivalent effectiveness in order to result in an approvable SIP revision.

Public notification of exceedances of the primary National Ambient Air Quality Standards (NAAQS), both annual and short term, for various pollutants is to be carried out in a manner consistent with the requirements, timetables, and reporting schedules of related regulations.

Under the monitoring regulations promulgated pursuant to §319 of the CAA (see 40 CFR 58.40), EPA is requiring the use of a uniform air quality index in urbanized areas of various sizes to report air quality daily. This guideline allows the use of that index to partly satisfy

the requirements of §127. Where States or local agencies are now operating a public notification program using the uniform air quality index in this guideline, they are encouraged to continue its operation and to use it in meeting the applicable requirements herein.

This guideline gives EPA's recommendations on how each State may meet the requirements of §127 to report periodically to the public the instances and areas in which the primary NAAQS are exceeded. These recommendations include reporting daily exceedances through a uniform air quality index, and annually providing prominent notice to the public as to when and where primary NAAQSs not covered by the daily index have been exceeded.

The guideline also describes what constitutes prominent public notice; the use of air quality data; how areas of exceedance may be delineated; and how the public may be advised of health hazards associated with such exceedances. Also provided in other sections of the guideline are ways of enhancing public awareness of air quality and public health problems, and ways each State may encourage public participation in regulatory and other efforts to improve air quality. A final section of the guideline suggests a format by which these requirements may be incorporated in State Implementation Plans (SIPs).

As stated in 40 CFR 51.285, each State is to submit to EPA a revision of their SIPs incorporating the requirements therein by March 1, 1980.

II. REPORTING EXCEEDANCES

In developing the requirements under 40 CFR 51.285(a), EPA considered that States must, under 40 CFR 58.40, in urban areas of certain sizes, use a uniform air quality index to report concentrations of criteria pollutants to the public on a daily basis. Consequently, this guideline allows the States to satisfy, in part, the requirements of §127 of the CAA by using the modified form of the Pollutant Standards Index (PSI) specified in Appendix G to 40 CFR 58.40 to report violations of the appropriate primary standards to which the PSI relates. These standards are the 8-hour standard for carbon monoxide (CO); the 24-hour standard for suspended particulate matter (TSP); the 24-hour standard for sulfur oxides (sulfur dioxide) (SO_2); and the 1-hour daily maximum standard for ozone (O_3).

However, since §127 requires each State to report on all exceedances of the primary standards, EPA recommends that each State report exceedances of standards not covered by the PSI in a report issued at least annually. These standards (primary standards only) are the annual standard for TSP, the annual standard for SO_x, the 1-hour standard for CO, the annual standard for nitrogen dioxide (NO_2), and the quarterly standard for lead (Pb). No report need be made of hydrocarbon concentrations; reporting of PSI values for O_3 as explained in Sections A, B, and C of this chapter will suffice.

The exceedances reported by each State to EPA in the Annual SLAMS Air Quality Information report, as required by Appendix F of 40 CFR 58, have been certified by the senior air pollution control officer in the

State to be accurate to the best of his or her knowledge. These data, which have also been certified to be collected in accordance with EPA approved techniques, would be suitable for use in reporting exceedances to the public as described in Sections A, B, and C of this chapter. The States are encouraged to use these data in reporting exceedances to the public.

The provisions of this guideline relating to the reporting of exceedances of the primary NAAQS apply only to the extent that ambient air quality monitors are installed and operated as required by the provisions of 40 CFR 58, Ambient Air Quality Surveillance, and 40 CFR 51, Requirements for the Preparation, Adoption, and Submittal of Implementation Plans.

A. REPORTING EXCEEDANCES IN URBAN AREAS WITH A POPULATION OVER 500,000.*

In urban areas with a population over 500,000, EPA recommends each State report exceedances both daily and annually if required by exceedances of applicable primary NAAQS. For the purposes of §127 of the Act, reports need not be made if no exceedances occur.

1. Daily reporting - EPA recommends that each State report to the general public on a daily basis through prominent public notice any exceedance of the following primary NAAQS for:

a. Sulfur oxides (sulfur dioxide) as stated in 40 CFR 50.4(b). This is the 24-hour standard of 365 micrograms per cubic meter (ug/m^3) not to be exceeded more than once per year.

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*See Appendix I.

b. Particulate matter as stated in 40 CFR 50.6(b). This is the 24-hour standard of 260 ug/m^3 not to be exceeded more than once per year.**

c. Carbon monoxide as stated in 40 CFR 50.8(a). This is the 8-hour standard of 10 milligrams per cubic meter not to be exceeded more than once per year, and

d. Ozone as stated in 40 CFR 50.9. This is the 1-hour daily maximum standard of 0.12 ppm.

In making the above daily reports, EPA recommends that each State use the PSI and follow the requirements specified in Appendix G to 40 CFR 58.40. For the purposes of §127 of the CAA, however, the State need only report daily PSI values of the critical pollutant (the pollutant exceeding the NAAQS by the greatest amount) for those days the PSI exceeds 100 or is forecast to exceed 100. Other exceedances for those days may be covered in the annual report. EPA recommends that each State begin reporting to the public daily exceedances through the use of the PSI on a schedule compatible with that established by §58.40. That schedule calls for daily reporting to begin in urban areas over 500,000 on January 1, 1981.

2. Annual reporting - EPA recommends that each State report to the general public on an annual basis through prominent public notice any exceedance during the past calendar year of the following primary NAAQS for:

** See Section IV-A, Monitoring Data Usage.

a. Sulfur oxides (sulfur dioxide) as stated in 40 CFR 50.4(a). This is the annual standard of 80 ug/m^3 - annual arithmetic mean.

b. Particulate matter as stated in 40 CFR 50.6(a). This is the annual standard of 75 ug/m^3 - annual geometric mean.

c. Carbon monoxide as stated in 40 CFR 50.8(b). This is the 1-hour standard of 40 milligrams per cubic meter not to be exceeded more than once per year.

d. Nitrogen dioxide as stated in 40 CFR 50.11. This is the annual standard of 100 ug/m^3 - annual arithmetic mean.

e. Lead as stated in 40 CFR 50.12. This is the quarterly standard for lead of 1.5 ug/m^3.

EPA also recommends that, for completeness, the annual report contain a summary of the daily exceedances that have occurred over the past year of those NAAQS reported by means of the PSI. In compiling the summary, the State may employ the computer programs and other techniques referenced in Appendix G to 40 CFR 58.40.

In reporting exceedances of primary NAAQS in the annual report to the public, EPA recommends that each State, except where equivalent information is presented through the use of summary PSI statistics:

- Provide, for each exceedance, for each pollutant, the following information:
  - city name or other area designation as appropriate,
  - site location,
  - date of exceedance, and
  - measured concentrations of the pollutant greater than the standard.

- Use the same measured concentrations for exceedances as are reported to EPA in the Annual SLAMS Air Quality Information report required by Appendix F of 40 CFR 58, and
- Supplement the foregoing information, including that derived from PSI values, as required by Chapter V, Reporting Areas of Exceedance.

By July 1, 1982, and at yearly intervals thereafter, EPA recommends the State make available to the public through prominent public notice the annual report called for in this section. This date reflects (1) the fact that the National Air Monitoring Stations (NAMS) called for by §58.30, NAMS network establishment, will be in operation no later than January 1, 1981; and (2) reports of air quality data for each calendar year are due to EPA on July 1 of the succeeding year. Accordingly, July 1, 1982, would be the first convenient date by which the States could be expected to have all the data in hand to prepare a report to the public of exceedances that occurred during the past calendar year.

Since States are not required by §51.17b to have lead monitors operating until approximately January 1982, the earliest they would have a full year of lead data available would be at the end of that year. Accordingly, EPA recommends that the annual report of July 1, 1983, be the first to contain information on lead exceedances.

B. REPORTING EXCEEDANCES IN URBAN AREAS WITH POPULATIONS BETWEEN 200,000 AND 500,000. *

In urban areas with a population between 200,000 and 500,000, EPA recommends reports of exceedances be made on a daily basis and on an annual basis if required by an exceedance of an applicable primary NAAQS.

1. Daily reporting - EPA recommends that, except for timing, daily reporting be carried out by means of the PSI as described in Section A.1 for urban areas over 500,000 population. Again, EPA recommends that each State begin reporting to the public daily exceedances through the use of the PSI on a schedule compatible with that established by §58.40. That schedule calls for daily reporting to begin in urban areas between 200,000 and 500,000 by January 1, 1983.

2. Annual reporting - Except for timing, these reporting recommendations are identical to those given in II.A.2 for urban areas over 500,000 population. Lead monitors are required in urban areas over 500,000, and in any other urban area reporting an exceedance of the lead NAAQS since January 1, 1974. EPA recommends any urban area between 200,000 and 500,000 population having a lead monitor indicating any exceedance of the Pb NAAQS since January 1, 1974, include such exceedances in its annual report.

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*See Appendix II.

EPA recommends that by July 1, 1982, and at yearly intervals thereafter, each State make available to the public through prominent public notice the annual report described herein. Not until July 1, 1983, need the annual report contain information on lead exceedances; and not until July 1, 1984, need the annual report contain a summary of daily exceedances that have occurred over the past year of those NAAQS reported by means of the PSI.

C. REPORTING EXCEEDANCES IN OTHER AREAS WITH STATE AND LOCAL AIR MONITORING STATIONS.

In addition to reporting of exceedances in urban areas over 200,000, EPA recommends the State also report on exceedances of any primary NAAQS recorded at a State and Local Air Monitoring Station (SLAMS) located in any other area.

1. Daily reporting - A State may have ongoing programs in these areas utilizing the PSI. If so, continued reporting of the PSI for the primary NAAQS listed in Section II.A.1 will satisfy the requirements of §127 with regard to those pollutants, provided related recommendations of this guideline or their equivalent in terms of providing prominent public notice, using monitoring data, reporting area of exceedance, etc., are also met.

2. Annual reporting - Except as the PSI is used to report exceedances, EPA recommends the State report to the general public once a year through prominent public notice any exceedance recorded at a SLAMS of the following primary NAAQS for:

a. Sulfur oxides (sulfur dioxide) as stated in 40 CFR 50.4(a) and (b). These are the annual arithmetic mean standards of 80 ug/m^3, and the 24-hour standard of 365 ug/m^3 not to be exceeded more than once per year, respectively.

b. Particulate matter as stated in 40 CFR 50.6(a) and (b). These are the annual standards of 75 ug/m^3 and the 24-hour standard of 260 ug/m^3 not to be exceeded more than once a year, respectively.

c. Carbon monoxide as stated in 40 CFR 50.8(a) and (b). These are the 8-hour and 1-hour standards of 10 milligrams per cubic meter and 40 milligrams per cubic meter, respectively. Each standard not to be exceeded more than once per year.

d. Ozone as stated in 40 CFR 50.9. This is the 1-hour daily maximum value of 0.12 ppm.

e. Nitrogen dioxide as stated in 50.11. This is the annual standard of 100 ug/m^3 - annual arithmetic mean.

f. Lead as stated in 40 CFR 50.12. This is the quarterly standard of 1.5 ug/m^3.*

EPA recommends: (1) such reporting begin for any exceedance of a NAAQS, except the NAAQS for lead, by July 1, 1982, and continue thereafter at least annually; (2) exceedances of the lead NAAQS be included in the July 1, 1983, and in all reports thereafter; and (3) the report of each State contain the information described in Subsection A.2 of this chapter.

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*Lead monitors may be installed in these areas pursuant to a finding by an EPA Regional Administrator that they are needed to adequately determine if the lead NAAQS is being attained and maintained.

D. CHRONOLOGICAL SUMMARY OF RECOMMENDATIONS

For convenience, the following chronological summary of the reporting recommendations in this chapter is presented. The applicable sections of the chapter appear in parenthesis.

Date	Action
January 1, 1981	In urban areas over 500,000, States begin reporting exceedances daily through the use of the PSI (A.1).
July 1, 1982	States begin issuing annual reports to the public of exceedances for all pollutants except lead in all areas as follows: a. In urban areas over 500,000 (A.2); b. In urban areas between 200,000 and 500,000 (B.2); c. For monitors in any area less than 200,000 (C.2). Summary PSI data on exceedances should be included for those areas over 500,000, and for any other existing PSI monitor regardless of location.
January 1, 1983	In urban areas between 200,000 and 500,000, States begin reporting daily exceedances through PSI (B.1).
July 1, 1983	States include exceedances of the lead standards in all annual reports (A.2; B.2; C.2).

July 1, 1984	In urban areas between 200,000 and 500,000, where they have not already done so, States include summary data on PSI exceedances in their annual reports (B.2) and continue all prior reporting.

III. PROMINENT PUBLIC NOTICE

For the purposes of §127 of the CAA, prominent public notice is defined with regard to both daily and annual reporting.

A. DAILY REPORTS

For daily reporting, EPA recommends the reporting agency make prominent public notice of the daily index report, as defined in Section 5 of Appendix G to 40 CFR 58.40, on those days the PSI exceeds 100 or is forecast to exceed 100. Prominent public notice consists of at a minimum: (1) furnishing the daily report to one or more of the appropriate news media (radio, television, newspapers); and (2) making the daily index report publicly available at one or more places of public access. Index reports also may be disseminated by means of recorded messages.

B. ANNUAL REPORTS

For annual reports, EPA recommends prominent public notice consisting of: (1) furnishing an analysis of the annual report in the form of a press release to appropriate news media (radio, television, newspapers), in which highlights of the report are discussed and evaluated; (2) announcing in the press release that the report is available to the public; (3) making the annual report publicly available at one or more places of public access such as the agency offices and public libraries; (4) mailing copies of the report to environmental, civic, and other groups; and (5) furnishing a copy of the press release and report to the appropriate EPA Regional Administrator.

IV. MONITORING DATA USAGE

A. MONITORING DATA FOR POLLUTANTS OTHER THAN LEAD.

Monitoring data used to prepare reports for the purposes of §127 of the CAA should be the same as that required by 40 CFR 58 - Ambient Air Quality Surveillance. In particular, the provisions of Section 3 of Appendix G to 40 CFR 58.40 in preparing the PSI for the purposes of §127 of the CAA should be noted. (These provisions allow the use of monitors other than the high volume sampler for making TSP measurements under certain conditions.)

B. MONITORING DATA FOR LEAD.

Air monitoring stations for lead will eventually be in the SLAMS network and will follow the reporting requirements for such stations. Data from them may then be used in satisfying §127 requirements. Until such time as the lead monitoring stations are incorporated in the SLAMS networks, monitoring data obtained from stations established under 40 CFR 51.17b may be used.

V. REPORTING AREAS OF EXCEEDANCE

To satisfy requirements of §127 of the Act and 40 CFR 51.285, the States must describe in their reports to the public the area of exceedance of an ambient air quality standard.

A. DAILY REPORTS

One convenient way the State could describe the area of exceedance in daily PSI reports of exceedances would be to specify the reporting area as defined in subparagraph 2c of Appendix G of 40 CFR 58 for exceedances of the critical pollutant. This procedure, or its equivalent, would be acceptable to EPA.

B. ANNUAL REPORTS

In annual summaries of PSI data, specifying the reporting areas as defined in subparagraph 2c of Appendix G of 40 CFR 58 corresponding to all exceedances would also be acceptable to EPA.

Another convenient technique for non-PSI data, acceptable to EPA, of describing the area of exceedance in an annual report would be to specify the area of exceedance in terms of the spatial scale of representativeness assigned to the monitoring stations which recorded the exceedances. The scales of representativeness to be used in this context are described in detail in Appendix D - Network Design for State and Local Air Monitoring Stations (SLAMS), and National Air Monitoring Stations (NAMS) of 40 CFR 58. This recommendation may be met by reporting the monitoring site address and the range of distances from the site corresponding to the assigned scale of representativeness.

VI. ADVISING THE PUBLIC OF HEALTH HAZARDS

The primary source of information on health effects associated with exceedances of the NAAQS are the Air Quality Criteria Documents. These documents are developed and made available to the public for each pollutant for which an air quality standard has been established. Not later than December 31, 1980, and at no more than five year intervals thereafter, EPA will make appropriate revisions to the criteria documents beginning with those documents not revised or first published since the passage of the 1977 amendments to the CAA.

New or revised criteria documents available as of this writing from the U.S. Environmental Protection Agency, Library Services Branch, MD-35, Research Triangle Park, North Carolina 27711 are:

> Air Quality Criteria for Ozone and Other Photochemical Oxidants, EPA-600/8-78-004, U.S. EPA, Office of Research and Development, Washington, D.C., April 1978.
>
> Air Quality Criteria for Lead, EPA-600/8-77-017, U.S. EPA, Office of Research and Development, Washington, D.C., December 1977.

Prior to the time the States are to make annual reports of exceedances available to the public, EPA will have published revised documents for the other criteria pollutants: particulate matter, sulfur oxides, carbon monoxide, and nitrogen oxides. These documents will contain summary tables of health effects useful to the States in identifying those effects associated with air quality levels above the NAAQS. These tables and other data in the revised documents may be used in advising the public of health hazards associated with elevated levels of air pollution as required by §127 of the Act.

A. DAILY REPORTS

In reporting exceedances to the public through the PSI, the States are required by Section 5 of Appendix G to 40 CFR 58.40 to use the index ranges and corresponding descriptor categories given therein.

B. ANNUAL REPORTS

It is recommended that the States use information from new or revised criteria documents as they become available from EPA in preparing their annual reports of exceedances.

For the convenience of States, two appendices are included herein which present summary information concerning health effects associated with elevated levels of criteria pollutants. Appendix III presents such information extracted from the criteria document for ozone, and Appendix IV presents a summary statement of the effects of elevated air lead levels based on information in the lead criteria document. This has been done in order to provide similar information in summary form for these two recently issued criteria documents as will appear in all future documents.

VII. PUBLIC AWARENESS AND INVOLVEMENT

Requirements for the reporting of exceedances of national primary ambient air quality standards and associated health hazards have been outlined in 40 CFR 51.285(a) and (b) and discussed in more detail in Sections II-VI of these guidelines. Section 40 CFR 51.285(c) requires that State and local governments must have provisions in their State implementation plans (SIPs) to enhance the public's awareness of air quality and public health relationships, air pollution control techniques, and ways in which the public can participate in regulatory and other efforts to improve air quality. In order to best accomplish this, an area's public participation program should inform and involve the public throughout the development of the SIP from the initial stages of problem identification to the implementation of control measures.

The requirements of 40 CFR 51.285(c) and §127 of the CAA can best be met by application of the requirements outlined in (a) EPA guidance developed to cover CAA requirements in §108(e)(4) (air quality-transportation planning process), §121 (intergovernmental consultation) and §174 (planning procedures for CO and O_3 nonattainment areas); and (b) appropriate EPA national and regional guidance provided regarding the use of grants to State and local air pollution control agencies (under §105 of the CAA) and the use of urban air quality planning grants to designated lead planning agencies (under §175 of the CAA). Specific details on implementation of the public information and involvement activities required for receipt and use of these funds should be spelled out in their required work plans, where applicable.

A general summary of the public information and involvement program efforts conducted under each of the above sections and other sections of the Act requiring public review and comment must be included in each State Implementation Plan's response to §127. A discussion of how each section's activities are interrelated and coordinated (e.g., coordinated use of §105 and 175 funds, interface between citizens and decision-makers, etc.) should be provided. Additionally, each SIP must include provisions to assure that State and local governments increase coordination of their respective public information and involvement efforts, where appropriate.

VIII. SIP PROCEDURAL REQUIREMENTS

Since Public Notification has not been previously required in the existing SIPs, it is appropriate for the revision prepared in response to the requirements given herein to simply add them to the existing SIP as new chapters. Since the material required by Section VII on Public Awareness and Participation is quite different from that required by the other sections of the guideline, it would seem appropriate to add that material in a chapter separate from the one dealing with other aspects of the guideline. For example, hypothetically assuming a State's current SIP contains Chapters 1 through 14, that portion of the revision which addresses the requirements for Public Awareness and Participation could be submitted as Chapter 15, and the material called for by the rest of the Guideline as Chapter 16.

APPENDIX I

URBANIZED AREAS* GREATER THAN 500,000 POPULATION (1970 Census**)

Area
° New York, N.Y.-Northeastern New Jersey
° Los Angeles-Long Beach, Calif.
° Chicago, Ill.-Northwestern Indiana
° Philadelphia, PA.-N.J.
° Detroit, Mich.
° San Francisco-Oakland, Calif.
° Boston, Mass.
° Washington, D.C.-Md.-Va.
° Cleveland, Ohio
° St. Louis, Mo.-Ill.
° Pittsburgh, Pa.
° Minneapolis-St. Paul, Minn.
° Houston, Texas
° Baltimore, Md.
° Dallas, Texas
° Milwaukee, Wisc.
° Seattle-Everett, Wash.
° Miami, Fla.
° San Diego, Calif.
° Atlanta, Ga.
° Cincinnati, Ohio-Ky.
° Kansas City, Mo.
° Buffalo, N.Y.
° Denver, Colo.
° San Jose, Calif.

Area
° New Orleans, La.
° Phoenix, Ariz.
° Portland, Ore.-Wash.
° San Juan, P.R.
° Indianapolis, Ind.
° Providence-Pawtucket-Warwick, R.I.-Mass.
° Columbus, Ohio
° San Antonio, Texas
° Louisville, Ky.-Ind.
° Dayton, Ohio
° Fort Worth, Texas
° Norfolk-Portsmouth, Va.
° Memphis, Tenn.-Miss.
° Sacramento, Calif.
° Ft. Lauderdale-Hollywood, Fla.
° Rochester, N.Y.
° San Bernardino-Riverside, Calif.
° Oklahoma City, Okla.
° Birmingham, Ala.
° Akron, Ohio
° Jacksonville, Fla.
° Springfield-Chicopee-Holyoke, Mass.-Conn.

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* As defined in U.S. Bureau of the Census, "1970 Census Users' Guide;" U.S. Government Printing Office, Washington, D.C., 1970 (p. 82).

**U.S. Bureau of Census, "U.S. Census of Population: 1970; Number of Inhabitants; Final Report PC (1)-A1; United States Summary." U.S. Government Printing Office, Washington, D.C. 1971.

APPENDIX II

URBANIZED AREAS* BETWEEN 200,000 AND 500,000 POPULATION (1970 Census*)

Area	Area
° Albany-Schenectady-Troy, N.Y.	° Albuquerque, N. Mex.
° Allentown-Bethlehem-Easton, Pa.-N.J.	° Auroga-Elgin, Ill.
° Austin, Tex.	° Baton Rouge, La.
° Bridgeport, Conn.	° Canton, Ohio
° Charleston, S.C.	° Charlotte, N.C.
° Chattanooga, Tenn.-Ga.	° Colorado Springs, Colo.
° Columbia, S.C.	° Columbus, Ga.-Ala.
° Corpus Christi, Tex.	° Davenport-Rock Island-Moline, Iowa, Ill.
° Des Moines, Iowa	° Flint, Mich.
° El Paso, Tex.	° Fresno, Calif.
° Fort Wayne, Ind.	° Harrisburg, Pa.
° Grand Rapids, Mich.	° Honolulu, Hawaii
° Hartford, Conn.	° Las Vegas, Nev.
° Lansing, Mich.	° Little Rock-North Little Rock, Ark.
° Lawrence-Haverhill, Mass.-N.H.	° Mobile, Ala.
° Madison, Wis.	° New Haven, Conn.
° Nashville-Davidson, Tenn.	° Oxnard-Ventura-Thousand Oaks, Calif.
° Newport News-Hampton, Va.	° Richmond, Va.
° Omaha, Nebr.-Iowa	° St. Petersburg, Fla.
° Orlando, Fla.	° Scranton, Pa.
° Peoria, Ill.	° South Bend, Ind.-Mich.
° Rockford, Ill.	° Syracuse, N.Y.
° Salt Lake City, Utah	° Tampa, Fla.
° Shreveport, La.	° Trenton, N.J., Pa.
° Spokane, Wash.	° Tulsa, Okla.
° Tacoma, Wash.	° Wichita, Kansas
° Toledo, Ohio-Mich.	° Wilmington, Del.-N.J.
° Tucson, Ariz.	° Youngstown-Warren, Ohio
° West Palm Beach, Fla.	
° Wilkes-Barre, Pa.	
° Worcester, Mass.	

*Urbanized areas as defined and census data as given in U.S. Bureau of the Census, Supplementary Report, 1970 Census of Population, Series PC(S1)-108, "Population and Land Areas of Urbanized Areas, for the United States: 1970 and 1960." U.S. Government Printing Office, Washington, D.C., 1979.

APPENDIX III

HEALTH EFFECTS ASSOCIATED WITH ELEVATED OZONE EXPOSURES*

PSI	ug/m^3	(PPM)	HEALTH EFFECTS
0	0	0	None reported.
50	120	0.06	
100	235	0.12	Increased rates of respiratory symptoms and headaches; reduction in visual acuity (perception).
200	400	0.20	Significant increase in asthma attacks in asthmatics; sphering (physical alteration) of red blood cells.
300	800	0.40	Significantly impaired pulmonary function in normal people; nausea, coughing, dry nose and throat.
400	1000	0.50	Increased mortality in sick and elderly; significant pulmonary malfunction in healthy persons.

*Adapted from Air Quality Criteria for Ozone and Other Photochemical Oxidants, EPA-600/8-78-004, U.S. EPA, Office of Research and Development, Washington, D.C., April, 1978.

APPENDIX IV

HEALTH EFFECT ASSOCIATED WITH ELEVATED LEAD EXPOSURES*

At air lead levels above the primary national ambient air quality standard for lead of 1.5 ug Pb/m_3, quarterly average, an increasing percentage of children will be above what EPA regards as the maximum safe blood lead level of 30 ug Pb/dl (micrograms of lead per deciliter). Blood lead levels in children above 30 ug Pb/dl are associated with elevated erythrocyte protoporphyrin anemia (above 40 ug Pb/dl) and possible neurological impairment (above 50 ug Pb/dl).

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*Adapted from Air Quality Criteria for Lead, EPA-600/8-77-017, U.S. EPA, Office of Research and Development, Washington, D.C., December, 1977.